

Food and Drug Administration, HHS

§ 173.315

**§ 173.315 Chemicals used in washing or to assist in the peeling of fruits and vegetables.**

Chemicals may be safely used to wash or to assist in the peeling of fruits and vegetables in accordance with the following conditions:

(a) The chemicals consist of one or more of the following:

(1) Substances generally recognized as safe in food or covered by prior sanctions for use in washing fruits and vegetables.

(2) Substances identified in this subparagraph and subject to such limitations as are provided:

Substances	Limitations
A mixture of alkylene oxide adducts of alkyl alcohols and phosphate esters of alkylene oxide adducts of alkyl alcohols consisting of: $\alpha$ -alkyl ( $C_{12}$ - $C_{18}$ )- <i>omega</i> -hydroxy-poly (oxyethylene) (7.5–8.5 moles)/poly (oxypropylene) block copolymer having an average molecular weight of 810; $\alpha$ -alkyl ( $C_{12}$ - $C_{18}$ )- <i>omega</i> -hydroxy-poly (oxyethylene) (3.3–3.7 moles) polymer having an average molecular weight of 380, and subsequently esterified with 1.25 moles phosphoric anhydride; and $\alpha$ -alkyl ( $C_{10}$ - $C_{12}$ )- <i>omega</i> -hydroxypoly (oxyethylene) (11.9–12.9 moles)/poly (oxypropylene) copolymer, having an average molecular weight of 810, and subsequently esterified with 1.25 moles phosphoric anhydride.	May be used at a level not to exceed 0.2 percent in lye-peeling solution to assist in the lye peeling of fruit and vegetables.
Aliphatic acid mixture consisting of valeric, caproic, enanthic, caprylic, and pelargonic acids.	May be used at a level not to exceed 1 percent in lye peeling solution to assist in the lye peeling of fruits and vegetables.
Polyacrylamide .....	Not to exceed 10 parts per million in wash water. Contains not more than 0.2 percent acrylamide monomer. May be used in the washing of fruits and vegetables.
Potassium bromide .....	May be used in the washing or to assist in the lye peeling of fruits and vegetables.
Sodium <i>n</i> -alkylbenzene-sulfonate (alkyl group predominantly $C_{12}$ and $C_{13}$ and not less than 95 percent $C_{10}$ to $C_{16}$ ).	Not to exceed 0.2 percent in wash water. May be used in washing or to assist in the lye peeling of fruits and vegetables.
Sodium dodecylbenzene-sulfonate (alkyl group predominantly $C_{12}$ and not less than 95% $C_{10}$ to $C_{16}$ ).	Do.
Sodium 2 ethyl-hexyl sulfate .....	Do.
Sodium hypochlorite .....	May be used in the washing or to assist in the lye peeling of fruits and vegetables.
Sodium mono- and dimethyl naphthalene sulfonates (mol. wt. 245–260)	Not to exceed 0.2 percent in wash water. May be used in the washing or to assist in the lye peeling of fruits and vegetables.

(3) Sodium mono- and dimethyl naphthalene sulfonates (mol. wt. 245–260) may be used in the steam/scald vacuum peeling of tomatoes at a level not to exceed 0.2 percent in the condensate or scald water.

(4) Substances identified in this paragraph (a)(4) for use in flume water for washing sugar beets prior to the slicing operation and subject to the limitations as are provided for the level of the substances in the flume water:

Substance	Limitations
$\alpha$ -Alkyl- <i>omega</i> -hydroxypoly-(oxyethylene) produced by condensation of 1 mole of $C_{11}$ - $C_{18}$ straight chain randomly substituted secondary alcohols with an average of 9 moles of ethylene oxide.	Not to exceed 3 ppm.
Linear undecylbenzenesulfonic acid.	Do.

Substance	Limitations
Dialkanolamide produced by condensing 1 mole of methyl laurate with 1.05 moles of diethanolamine.	Not to exceed 2 ppm.
Triethanolamine .....	Do.
Ethylene glycol monobutyl ether ..	Not to exceed 1 ppm.
Oleic acid conforming with § 172.860 of this chapter.	Do.
Tetrapotassium pyrophosphate ....	Not to exceed 0.3 ppm.
Monoethanolamine .....	Do.
Ethylene dichloride .....	Not to exceed 0.2 ppm.
Tetrasodium ethylenediamine-tetraacetate.	Not to exceed 0.1 ppm.

(5) Substances identified in this paragraph (a)(5) for use on fruits and vegetables that are not raw agricultural commodities and subject to the limitations provided:

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Substances	Limitations
Hydrogen peroxide .....	Used in combination with acetic acid to form peroxyacetic acid. Not to exceed 59 ppm in wash water.
1-Hydroxyethylidene-1,1-diphosphonic acid.	May be used only with peroxyacetic acid. Not to exceed 4.8 ppm in wash water.
Peroxyacetic acid .....	Prepared by reacting acetic acid with hydrogen peroxide. Not to exceed 80 ppm in wash water.

(b) The chemicals are used in amounts not in excess of the minimum required to accomplish their intended effect.

(c) The use of the chemicals listed under paragraphs (a)(1), (a)(2), and (a)(4) is followed by rinsing with potable water to remove, to the extent possible, residues of the chemicals.

(d) To assure safe use of the additive:

(1) The label and labeling of the additive container shall bear, in addition to the other information required by the act, the name of the additive or a statement of its composition.

(2) The label or labeling of the additive container shall bear adequate use directions to assure use in compliance with all provisions of this section.

[42 FR 14526, Mar. 15, 1977, as amended at 42 FR 29856, June 10, 1977; 42 FR 32229, June 24, 1977; 43 FR 54926, Nov. 24, 1978; 61 FR 46376, 46377, Sept. 3, 1996; 63 FR 7069, Feb. 12, 1998; 64 FR 38564, July 19, 1999]

**§ 173.320 Chemicals for controlling microorganisms in cane-sugar and beet-sugar mills.**

Agents for controlling microorganisms in cane-sugar and beet-sugar mills may be safely used in accordance with the following conditions:

(a) They are used in the control of microorganisms in cane-sugar and/or beet-sugar mills as specified in paragraph (b) of this section.

(b) They are applied to the sugar mill grinding, crusher, and/or diffuser systems in one of the combinations listed in paragraph (b) (1), (2), (3), or (5) of this section or as a single agent listed in paragraph (b) (4) or (6) of this section. Quantities of the individual additives in parts per million are expressed in terms of the weight of the raw cane or raw beets.

(1) Combination for cane-sugar mills:

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	Parts per million
Disodium cyanodithioimidocarbonate .....	2.5
Ethylenediamine .....	1.0
Potassium <i>N</i> -methylthiocarbamate .....	3.5

(2) Combination for cane-sugar mills:

	Parts per million
Disodium ethylenebisdithiocarbamate .....	3.0
Sodium dimethyldithiocarbamate .....	3.0

(3) Combinations for cane-sugar mills and beet-sugar mills:

	Parts per million
(i) Disodium ethylenebisdithiocarbamate .....	3.0
Ethylenediamine .....	2.0
Sodium dimethyldithiocarbamate .....	3.0
(ii) Disodium cyanodithioimidocarbonate .....	2.9
Potassium <i>N</i> -methylthiocarbamate .....	4.1

(4) Single additive for cane-sugar mills and beet-sugar mills.

	Parts per million
2,2-Dibromo-3-nitropropionamide (CAS Reg. No. 10222–01–2). <i>Limitations:</i> By-product molasses, bagasse, and pulp containing residues of 2,2-dibromo-3-nitropropionamide are not authorized for use in animal feed.	Not more than 10.0 and not less than 2.0.

(5) Combination for cane-sugar mills:

	Parts per million
<i>n</i> -Dodecyl dimethyl benzyl ammonium chloride .....	0.05±0.005
<i>n</i> -Dodecyl dimethyl ethylbenzyl ammonium chloride .....	0.68±0.068
<i>n</i> -Hexadecyl dimethyl benzyl ammonium chloride .....	0.30±0.030
<i>n</i> -Octadecyl dimethyl benzyl ammonium chloride .....	0.05±0.005
<i>n</i> -Tetradecyl dimethyl benzyl ammonium chloride .....	0.60±0.060
<i>n</i> -Tetradecyl dimethyl ethylbenzyl ammonium chloride .....	0.32±0.032

*Limitations.* Byproduct molasses, bagasse, and pulp containing residues of these quaternary ammonium salts are not authorized for use in animal feed.

(6) Single additive for beet-sugar mills:

	Parts per million
Glutaraldehyde (CAS Reg. No. 111–30–8).	Not more than 250.